

We Claim:

1. A foamed pressure sensitive adhesive article, the article comprising:
  - a) a polymeric mixture containing at least one styrenic block copolymer and at least one polyarylene oxide polymer; and
  - b) one or more expandable polymeric microsphere(s).
2. The foamed pressure sensitive adhesive article of claim 1, wherein the styrenic block copolymer includes a diene copolymer.
3. The foamed pressure sensitive adhesive article of claim 1, wherein the styrenic block copolymer includes an isoprene copolymer.
4. The foamed pressure sensitive adhesive article of claim 1, wherein the styrenic block copolymer comprises a butadiene copolymer.
5. The foamed pressure sensitive adhesive article of claim 1, wherein the styrenic block copolymer comprises a polymodal asymmetric block copolymer.
6. The foamed pressure sensitive adhesive article of claim 1, wherein the polyarylene oxide polymer has a softening temperature of at least 110° C.
7. The foamed pressure sensitive adhesive article of claim 1, wherein the polyarylene oxide polymer comprises polyphenylene ether.
8. The foamed pressure sensitive adhesive article of claim 1, wherein the polyarylene oxide polymer comprises poly(2,6-dimethyl-1,4-phenylene ether).
9. The foamed pressure sensitive adhesive article of claim 1, further comprising a tackifier.
10. The foamed pressure sensitive adhesive article of claim 1, further comprising at least one of a chemical blowing agent or a physical blowing agent.

11. The foamed pressure sensitive adhesive article of claim 1, having a gel content of less than 25 percent.

12. The foamed pressure sensitive adhesive article of claim 1, wherein the article has peel strength greater than 100 N/dm on polypropylene for an adhesive thickness of about 1.14 mm.

13. A foamed pressure sensitive adhesive article, the article comprising:  
at least one styrenic block copolymer and at least one polyarylene oxide;  
wherein the article is a pressure sensitive adhesive foam that has a shear holding power of at least 3000 minutes on anodized aluminum at a temperature of 70°C as determined by ASTM 3654 utilizing a sample with dimensions of 25.4 mm by 12.7 mm supporting a 500 g mass, and a gel content of less than 25 percent of crosslinkable material.

14. The foamed pressure sensitive adhesive article of claim 13, further comprising voids formed by expanded microspheres.

15. The foamed pressure sensitive adhesive article of claim 13, wherein the polyarylene oxide comprises poly(2,6-dimethyl-1,4-phenylene ether).

16. A foamed pressure sensitive adhesive article, the article comprising:  
at least one styrenic block copolymer and at least one polyarylene oxide;  
wherein the article is a pressure-sensitive adhesive foam that has a shear holding power that is at least 100 percent more than that of a chemically uncrosslinked foam of a similar composition but without polyarylene oxide when tested on anodized aluminum at a temperature of 70°C as determined by ASTM 3654 utilizing a sample with dimensions of 25.4 mm by 12.7 mm supporting a 500 g mass, and a gel content of less than 25 percent of crosslinkable material.

17. A multi-layered article comprising at least one pressure sensitive adhesive foam layer selected from the group consisting of

a) a polymeric mixture containing at least one styrenic block copolymer and at least one polyarylene oxide polymer, and one or more expandable polymeric microspheres;

b) a polymeric mixture containing at least one styrenic block copolymer and at least one polyarylene oxide polymer wherein the pressure-sensitive adhesive foam layer has a shear holding power of at least 1000 minutes on anodized aluminum at 70°C when Kraton D1107 as the styrenic block copolymer, and a gel content of less than 25 percent of crosslinkable material; and

c) a polymeric mixture containing at least one styrenic block copolymer and at least one polyarylene oxide polymer wherein the pressure sensitive adhesive foam layer has a shear holding power of at least 100 percent more than that of a chemically uncrosslinked foam of a similar composition but without polyarylene oxide when tested on anodized aluminum at a temperature of 70°C as determined by ASTM 3654 utilizing a sample with dimensions of 25.4 mm by 12.7 mm supporting a 500 g mass, and a gel content of less than 25 percent of crosslinkable material.

18. The foamed pressure sensitive adhesive article of claim 17, wherein at least one layer is not foamed.

19. A method of forming a foamed pressure sensitive adhesive article, the method comprising:

a) providing a polymeric composition containing at least one styrenic block copolymer polymeric material and at least one polyarylene oxide polymer having a softening temperature equal to or greater than 110°C;

b) heating the polymeric composition to a softening temperature without substantially degrading the polymeric components;

c) mixing the polymeric composition;

d) cooling the polymeric composition to a temperature below the activation temperature of polymeric microspheres, and

e) adding expandable polymeric microspheres to the cooled polymeric composition.

20. The method according to claim 19, further comprising:

f) heating the polymeric composition above the activation temperature of the polymeric microspheres.

21. The method according to claim 19, further comprising melt affixing at least one additional layer onto at least one major surface of the foamed pressure-sensitive article.